

Population increases were significant within centers, but these are all outside the proposed project area. Few sites dating from this period have been identified; however, many of the sites established earlier continue to serve the same functions within the same settlement conditions.

Motorized transportation and upgrading of roads for automobile traffic encouraged distinctive settlement shifts during the Modern Period (1911-1950). Urban population growth continued and the concentration of commerce and industry increased. A more important shift was the expansion of a non-agricultural population into rural areas. Primary and secondary roads became the foci of residential settlement and small parcels of land along the roads were carved from large farm properties for single family dwellings. The farmsteads generally remained behind the new residential front and the character of the region remained agrarian. New settlement types for this period are the non-agricultural residences and automobile-related facilities. The pattern of settlement is essentially a composite or mosaic of earlier patterns superimposed one upon the other.

MANAGEMENT CONSIDERATIONS

Up to this point, this report has focused on listing the known and potential cultural resources for the proposed project area. In this section, we will: 1) consider the known and potential significance of the resources; 2) note those sections of the project area which are the most "sensitive" in terms of cultural resources; and 3) make recommendations about the future stages of the cultural resources management process. Specifically, we will note the sections of the project area which will require intensive archaeological research efforts to mitigate the effects of the proposed highway development and also note potential research methods and mitigation costs.

General Site Significance Issues

Consideration of site significance is critical for a management study such as this one because the level of site significance determines the kinds of further work that may be required by Federal law. Specifically, the eligibility of a site for listing on the National Register of Historic Places, which is based on significance, needs to be addressed because this eligibility ultimately determines the needs for further work. Discussions of site significance, and potential eligibility for the National Register, are provided below for prehistoric and historic sites.

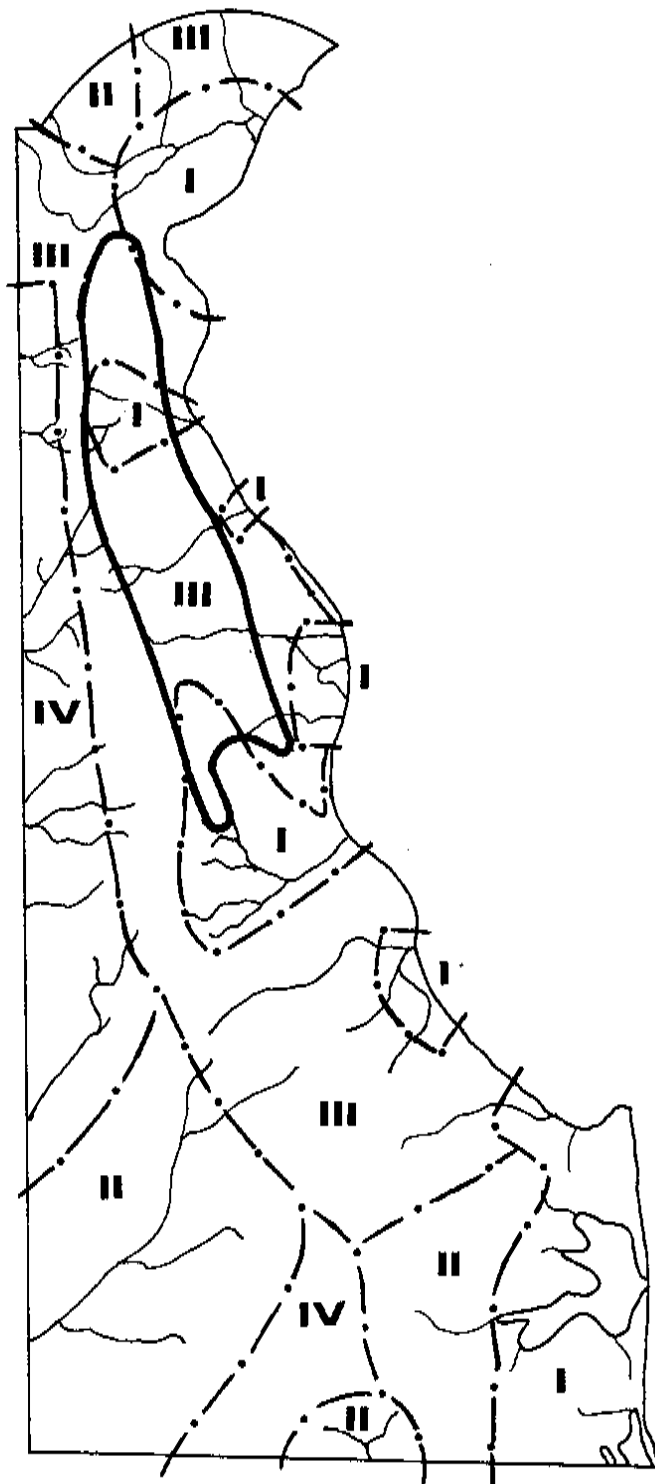
Prehistoric Site Significance

The management section of the Delaware State Plan for the Management of Prehistoric Archaeological Resources (Custer 1983b:Chapter 8) and similar plans for the upper and lower Eastern Shore of Maryland (Custer 1983c; Davidson 1982) provide the bases for assessing prehistoric site significance. The Delaware plan divides the state into various zones which have varying sensitivities for containing significant archaeological sites. Figure 24 shows the location of these zones in relation to the project area. It can be seen that much of the project area falls into the highest sensitivity zone while other portions have a lower sensitivity. Although this reveals something of the potential significance of project area sites, a more detailed consideration which addresses individual site types significance is needed.

One way to consider the potential significance of sites within the study area is to use the series of management zones noted in the state plan. Figure 25 shows the management zones and their relation to the study area while Table 15 identifies the management zones and Table 16 shows their relation to the sensitivity zones. Four management units, Interior, Mid-Peninsular Drainage Divide, Mid-Drainage, and Coastal, are included in the study area. Tables 17 - 20 list the various site types from different time periods and note their potential

FIGURE 24

DELAWARE PREHISTORIC COMPOSITE SENSITIVITY ZONES

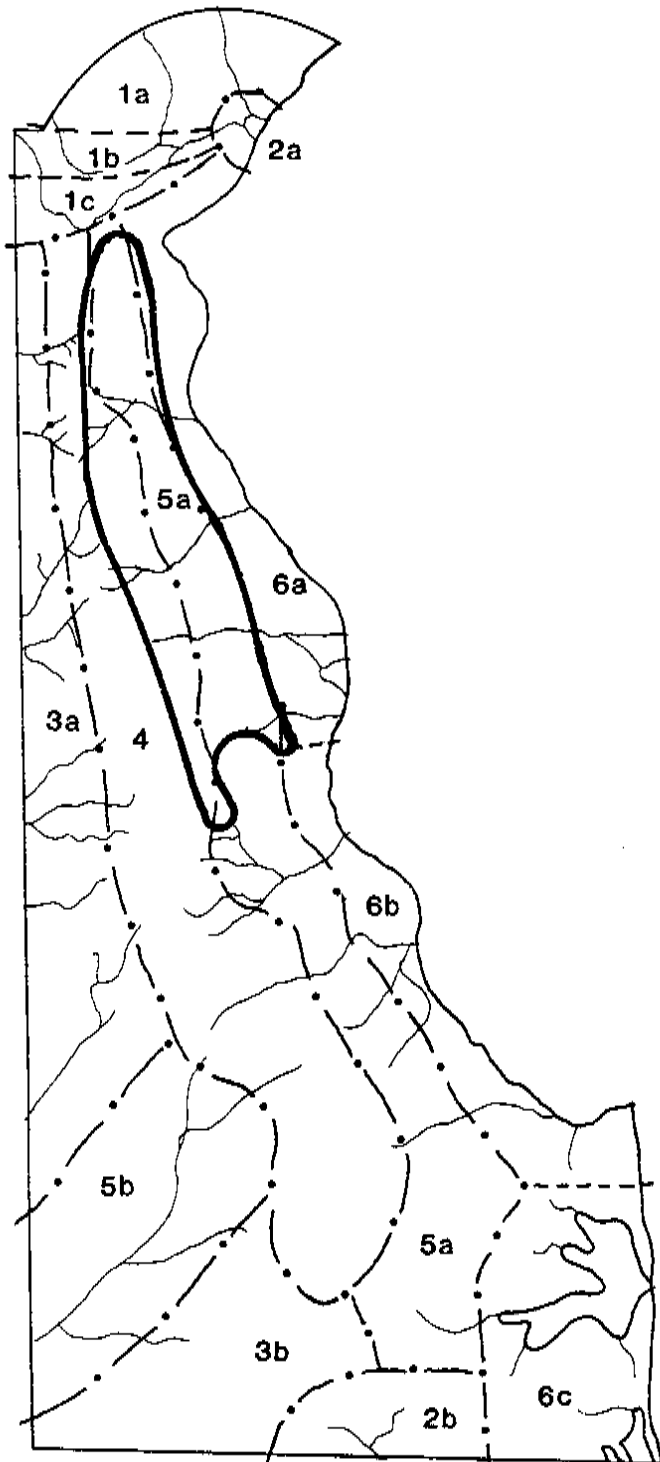


KEY:

- I** - HIGH/MEDIUM SIGNIFICANT SITE POTENTIAL WITH DEVELOPMENT PRESSURE
- II** - HIGH SIGNIFICANT SITE POTENTIAL WITH NO DEVELOPMENT PRESSURE
- III** - MEDIUM SIGNIFICANT SITE POTENTIAL WITH NO DEVELOPMENT PRESSURE
- IV** - LOW SIGNIFICANT SITE POTENTIAL WITH NO DEVELOPMENT PRESSURE

FIGURE 25

DELAWARE PREHISTORIC MANAGEMENT UNITS



KEY:

- IDENTIFIED IN TABLE 15

significance, the general probability of their occurrence, and the quality of the data relating to them. These listings generally indicate which types of sites are most likely to be significant within the study area.

Table 15

Delaware Management Units

- 1 - Northern Delaware Management Unit
 - 1a - Piedmont Uplands (Archaic - Woodland II)
 - 1b - Fall Line (Woodland I and II)
 - 1c - Delaware Chalcedony Complex (Paleo-Indian)
- 2 - Interior Swamp Management Unit
 - 2a - Churchmans Marsh - Includes New Castle Contact Study Unit
 - 2b - Upper Pocomoke
- 3 - Interior Management Unit
 - 3a - Northern Sub-Unit
 - 3b - Southern Sub-Unit
- 4 - Mid-Peninsular Drainage Divide Management Unit - Includes Mid-Peninsular Drainage Divide
 - Non-Quarry Paleo-Indian Site Complexes
- 5 - Mid-Drainage Management Unit
 - 5a - Delaware Drainage
 - 5b - Nanticoke Drainage
- 6 - Coastal Management Unit
 - 6a - Northern Bay
 - 6b - Southern Bay
 - 6c - Atlantic Coast

Table 16

Management Priorities

Category I (more than 50% in Zone I)

Fall Line sub-unit of Northern Delaware Management Unit
Churchmans Marsh sub-unit of Interior Swamp Management Unit
Atlantic Coast sub-unit of Coastal Management Unit
South Bay sub-unit of Coastal Management Unit

Category II (more than 50% in Zones I and II)

Piedmont Uplands sub-unit of Northern Delaware Management Unit
Upper Pocomoke sub-unit of Interior Swamp Management Unit
Mid-Peninsular Drainage Divide Management Unit
Nanticoke sub-unit of Mid-Drainage Management Unit

Category III (more than 50% in Zone III)

Delaware Chalcedony Complex sub-unit of Northern Delaware Management Unit
Delaware sub-unit of Mid-Drainage Management Unit
North Bay sub-unit of Coastal Management Unit

Category IV (more than 50% in Zone IV)

Interior Management Unit

More specific significance data can be developed for specific sections of the project area by comparing the sites listed in Tables 17 - 20 with the probability zones mapped in Attachment V, and their descriptions listed in Appendix IV. The descriptions of typical locations and lists of site types included by time periods provide the best match of significant site types and probability zones. In order to determine the types of significant site types that might be contained within any probability zone, the numbered zone from the map in Attachment V can be compared to the listed description in Appendix IV. Then, the site types listed in Appendix IV can be compared to the significant site types listed in Tables 17 - 20.

A quick check of the major probability zones noted in Attachment V and Appendix IV shows that usually the largest high probability zones, especially those surrounded by larger medium probability zones, contain significant micro-band base camps and macro-band base camps.

Table 17

Site Probabilities and Data Quality - Interior Management Unit

<u>Site Types</u>	<u>Site Probabilities</u>	<u>Data Quality</u>
<u>Paleo-Indian</u>		
quarry	L	P
quarry reduction	L	P
quarry related base camp	L	P
base camp	L	P
base camp maintenance station	L	P
hunting sites	L-M	P
DATA QUALITY	P	
<u>Archaic</u>		
macro-band base camp	L	P
micro-band base camp	L	P
procurement site	L-M	P
DATA QUALITY	P	
<u>Woodland I</u>		
macro-band base camp	L	P
micro-band base camp	L	P
procurement site	L-M	P
DATA QUALITY	P	
<u>Woodland II</u>		
macro-band base camp	L	P
micro-band base camp	L	P
procurement site	L-M	P
DATA QUALITY	P	
<u>Contact</u>		
general Contact sites	L	P
DATA QUALITY	P	

KeySite Probabilities

L - low
 L-M - low to medium
 M - medium
 M-H - medium to high
 H - high

Data Quality

P - poor
 P-F - poor to fair
 F - fair
 F-G - fair to good
 G - good

Table 18

**Site Probabilities and Data
Quality - Mid-Peninsular Drainage Divide
Management Unit**

<u>Site Types</u>	<u>Site Probabilities</u>	<u>Data Quality</u>
<u>Paleo-Indian</u>		
quarry	L	F
quarry reduction	L	F
quarry related base camp	L	F
*base camp	M-H	F
*base camp maintenance station	M-H	F
*hunting sites	H	F
DATA QUALITY	F	
<u>Archaic</u>		
macro-band base camp	L	P
*micro-band base camp	L-M	P
*procurement site	M	P
DATA QUALITY	P	
<u>Woodland I</u>		
macro-band base camp	L	P
micro-band base camp	L-M	P
*procurement site	M	P
DATA QUALITY	P	
<u>Woodland II</u>		
macro-band base camp	L	P
micro-band base camp	L-M	P
procurement site	M	P
DATA QUALITY	P	
<u>Contact</u>		
general Contact sites	L	P
DATA QUALITY	P	

*Sites likely to yield significant data.

Key

Site Probabilities

L - low
L-M - low to medium
M - medium
M-H - medium to high
H - high

Data Quality

P - poor
P-F - poor to fair
F - fair
F-G - fair to good
G - good

Table 19

**Site Probabilities and Data Quality
- Mid-Drainage Management Unit**

<u>Site Types</u>	<u>Site Probabilities by Sub-Units Delaware</u>	<u>DATA QUALITY</u>
<u>Paleo-Indian</u>		
quarry	L	P
quarry reduction	L	P
quarry related base camp	L	P
base camp	L	P
base camp maintenance station	L	P
hunting sites	L-M	P
DATA QUALITY	P	
<u>Archaic</u>		
macro-band base camp	M	P
micro-band base camp	M	P
procurement site	M	P
DATA QUALITY	P	
<u>Woodland I</u>		
*macro-band base camp	H	F-G
*micro-band base camp	H	F-G
*procurement sites	H	F-G
*major mortuary/exchange sites	H	P-G
*minor mortuary/exchange sites	H	P-F
DATA QUALITY	F-G	
<u>Woodland II</u>		
*macro-band base camp	M	P
*micro-band base camp	M	P
*procurement site	H	F-P
DATA QUALITY	P-F	
<u>Contact</u>		
general Contact site	L	P
DATA QUALITY	P	

*Sites likely to yield significant data.

Key

Site Probabilities

L - low
L-M - low to medium
M - medium
M-H - medium to high
H - high

Data Quality

P - poor
P-F - poor to fair
F - fair
F-G - fair to good
G - good

Table 20

**Site Probabilities and Data Quality
- Coastal Management Unit**

<u>Site Types</u>	<u>Site Probabilities by Sub-Units</u>		<u>DATA QUALITY</u>
	North Bay	South Bay	
<u>Paleo-Indian</u>			
quarry	L	L	P
quarry reduction	L	L	P
quarry related base camp	L	L	P
base camp	L	L	P
base camp maintenance station	L	L	P
hunting sites	M	M	P
DATA QUALITY	P	P	
<u>Archaic</u>			
macro-band base camp	L	L	P
micro-band base camp	L	L	P
procurement site	M	M	P
DATA QUALITY	P	P	
<u>Woodland I</u>			
*macro-band base camp	L	L	
*micro-band base camp	M-H	M-H	F-G
*procurement site	H	H	F-G
*mortuary site	L	H	P
DATA QUALITY	P	F-G	
<u>Woodland II</u>			
*macro-band base camp	M	H	F-G
*micro-band base camp	M	H	F-G
procurement site	H	H	F-G
DATA QUALITY	P	F-G	
<u>Contact</u>			
*general Contact site	L	L	P-F
DATA QUALITY	P	P	

*Sites likely to yield significant data.

Key

Site Probabilities

L - low
 L-M - low to medium
 M - medium
 M-H - medium to high
 H - high

Data Quality

P - poor
 P-F - poor to fair
 F - fair
 F-G - fair to good
 G - good

This observation corresponds with the findings presented by Eveleigh et al. (1983) for the southern portions of the study area. In most cases the high probability zones along the major drainages contain significant sites that are from the Archaic and later periods. Areas with potential Paleo-Indian sites, which would automatically be significant given their scarcity, as well as later sites are generally restricted to high probability zones that are associated with bay/basin features.

Medium probability zones along lower order interior drainages most likely will contain micro-band base camps post-dating the Archaic Period. If these sites have not been plowed, or otherwise destroyed, they are likely to be significant. Smaller procurement sites are also likely to be found in these isolated medium probability zones; however, their significance is not likely to be as great. At least, fewer are likely to be undisturbed and significant. Even if they are significant, the costs of their mitigation and excavation is much lower than the larger base camp sites. It should be noted that macro-band base camps may be present in these medium probability areas; however, they will be uncommon.

In the low probability zones, the frequency of any kind of base camps is expected to be quite low. Frequencies of procurement sites will be higher, but in general, the low probability zones are the least sensitive with respect to prehistoric cultural resources. Nonetheless, it is possible that a few significant sites will be found in the low probability zones.

One class of significant sites that is often found in the low probability zones includes the Webb Complex mortuary/exchange sites. Any, and all, of these sites are eligible for the National Register and may even be candidates for in-place preservation rather than mitigation through excavations and data recovery. Any Delmarva Adena mortuary/exchange centers would also fall into this category; however, these sites are more likely to be located in the high probability zones (see Eveleigh et al. 1983).

In sum, the probability zones can be used as a rough guide to potential site significance and sensitivity. The high probability zones have the greatest sensitivity and the greatest potential for significant sites. Medium probability zones have less potential and a lesser sensitivity and low probability zones have the lowest potential and are the least sensitive. Any mortuary/exchange centers are significant and may be found in any of the probability zones within the locations noted on Attachment V. Before leaving the discussion of prehistoric site significance it should also be noted that there are two sites within the project that already listed on the National Register of Historic Places: the Hughes-Willis site (7K-D-21), the Hell Island site (7NC-F-7). Other potential National Register eligible sites included within the known sites of the project area are listed in Table 21.

Table 21

**Potential National Register
Eligible Prehistoric Sites**

Clayton Quad: 7K-A-1

Dover Quad: 7K-C-18, 7K-C-33, 7K-C-86

Frederica Quad: 7K-F-12, 7K-F-44, 7K-F-45, 7K-F-46, 7K-F-47,
7K-F-52, 7K-F-54, 7K-F-55, 7K-F-58, 7K-F-65

Kenton Quad: none

Little Creek Quad: 7K-D-10, 7K-D-21, 7K-D-25, 7K-D-33, 7K-D-46,
7K-D-68, 7K-D-69

Middletown Quad: 7NC-F-8, 7NC-F-9, 7NC-F-10, 7NC-F-12, 7NC-F-13,
7NC-F-29, 7NC-G-5, 7NC-G-7, 7NC-G-10, 7NC-G-15,
7NC-G-27

Saint Georges Quad: 7NC-E-2, 7NC-E-11, 7NC-F-1

Smyrna Quad: 7K-A-14, 7K-A-15

Wyoming Quad: 7K-C-33, 7K-E-75, 7K-C-103, 7K-C-104

Historic Site Significance

In Appendices II and III the archaeological potential and the archaeological significance of all the historic resources identified within the proposed project area were assessed on a site-by-site basis. The archaeological potential in this context refers to a site's potential to contain undisturbed, archaeologically meaningful cultural remains. The issue of site integrity is incorporated in this definition. The archaeological potential of a site was evaluated on the basis of information obtained from the BAHP standing structure inventory files and through examination of current editions of USGS 7.5' maps. In Appendices II and III the potential of a site is categorized as: 1) (Y) yes, exhibits archaeological potential; (N) no, exhibits no archaeological potential due to severe disturbance or destruction of the site; and (U) unknown, there is no basis for making an evaluation of the archaeological potential of the site.

The evaluation of the archaeological significance of project sites is tentative and the evaluations are presented as a management tool. The preliminary character of the data base necessitates a qualifying statement; on the basis of the preliminary data gathered, the significance of the potential archaeological remains is evaluated. Five levels of significance are employed in the evaluation process: (H) high, (M) medium, (L) low, (N) no, and (U) unknown. The criteria applied in the evaluation integrated temporal, functional and social-historical data. Table 22 presents the criteria applied to the data base to determine the potential archaeological significance of historic resources (after Wall 1981:146-147; See Schiffer and Gumerman 1977:229). The criteria are not ranked and they are not meant to be all-inclusive. The evaluation of the historic resources according to the criteria was based on the available archaeological data. As further information is obtained more refined determinations of historic resource significance will be

possible. Each historic resource assessed is expected to provide additional information on criteria listed in the Significance column in Appendices II and III. All historic sites within the project area have been mapped according to their significance level on 7.5' USGS maps in Attachment IV. The predictive zones mapped in Attachments VI and VII and listed in Appendices VI and VII are drawn to include areas of similar site significance.

Management Units

The final step in developing a series of management guidelines for the proposed project area was to combine the spatial data on site significance and develop a series of management units that could be mapped for the entire project area. The term "management units" comes from a Federal guide to cultural resource management planning (Heritage Conservation Recreation Service 1980), and refers simply to spatial areas that exhibit similar distributions of cultural resources of similar types and significance. Management units are usually developed by overlaying maps of known and potential resources of various types, and potential significance. Areas with similar distributions of significant resources are then noted as individual study units. A similar method was utilized in the development of prehistoric management units in the Delaware State Plan for the Management of Prehistoric Archaeological Resources (Custer 1983b).

Table 22

**Criteria for Evaluating the Archaeological
Significance of Potential Historic Resources**

1. Age: Sites providing information on early settlement, technology, commerce, industry, or lifeways are more significant.
2. Regional Interest: Sites which have impact on regional or local research problems are more significant.
3. National Interest: Sites which have impact on national or universal research problems are more significant.
4. Preservation: Sites containing well-preserved structural, faunal, floral, or skeletal remains are more significant.
5. Multi-function: Sites exhibiting a range of well-defined activity/functional loci are more significant.
6. Uniqueness: Sites containing rare or unique features (technological innovations, slave-related components) are more significant.
7. Previous Knowledge: Site types about which little is known are more significant and those which provide information on poorly understood social-historical contexts are more significant.
8. Public Significance: Sites which may easily be used in public education programs due to site contents and accessibility for public viewing are more significant.
9. Size and Density: Larger sites and those containing dense deposits of material culture are more significant.
10. Famous Events or Persons: Sites associated with a person or event of local, regional, or national interest are more significant.
11. Duration of Occupation: Sites exhibiting discrete temporal loci whether in the context of long-term or short-term occupations are more significant.

For this study, three maps were combined to develop management units including Attachment V (prehistoric predictions), Attachment VI (pre-1802 site predictions), and Attachment VII (post-1802 site distribution zones). Analysis of overlapping zones showed that there were six basic types of management units, each with a different combination of site types with varied significance. Table 23 lists each management unit and notes its contents. Attachment VIII and Figure 26

FIGURE 26
COMPOSITE OF CULTURAL RESOURCES



show the distribution of the management zones on each USGS 7.5' map for the project area.

The management units noted above can also be viewed as sensitivity zones for cultural resources because, as has been noted previously in this section, the predictive zones mapped in Attachments V through VII are directly related to potential presence of significant sites. Also, the definitions of the management zones noted in Table 23 were developed based specifically on site significance. In general, the Management Units listed in Table 23 are ranked in terms of significance with Unit I having the highest potential for the most significant sites and Unit VI having the lowest.

Table 23
Management Zones

<u>Zone</u>	<u>Significant Site Potential</u>		
	<u>Prehistoric</u>	<u>Pre-1802</u>	<u>Post-1802</u>
I	H&M, or M	H	H
II	L	H	H
III	L	H	L
IV	L	L	H
V	M	L	H
VI	L	L	L

KEY: H=high, M=medium, L=low

An examination of the maps in Attachment VIII shows that most of the higher sensitivity zones are found adjacent to drainages and early road networks (Units I and II). Units with a more moderate significance (Units III - V) are mainly located near secondary roads and lower order watercourses and the units with the lowest sensitivity (Units V and VI) are located in interior regions.

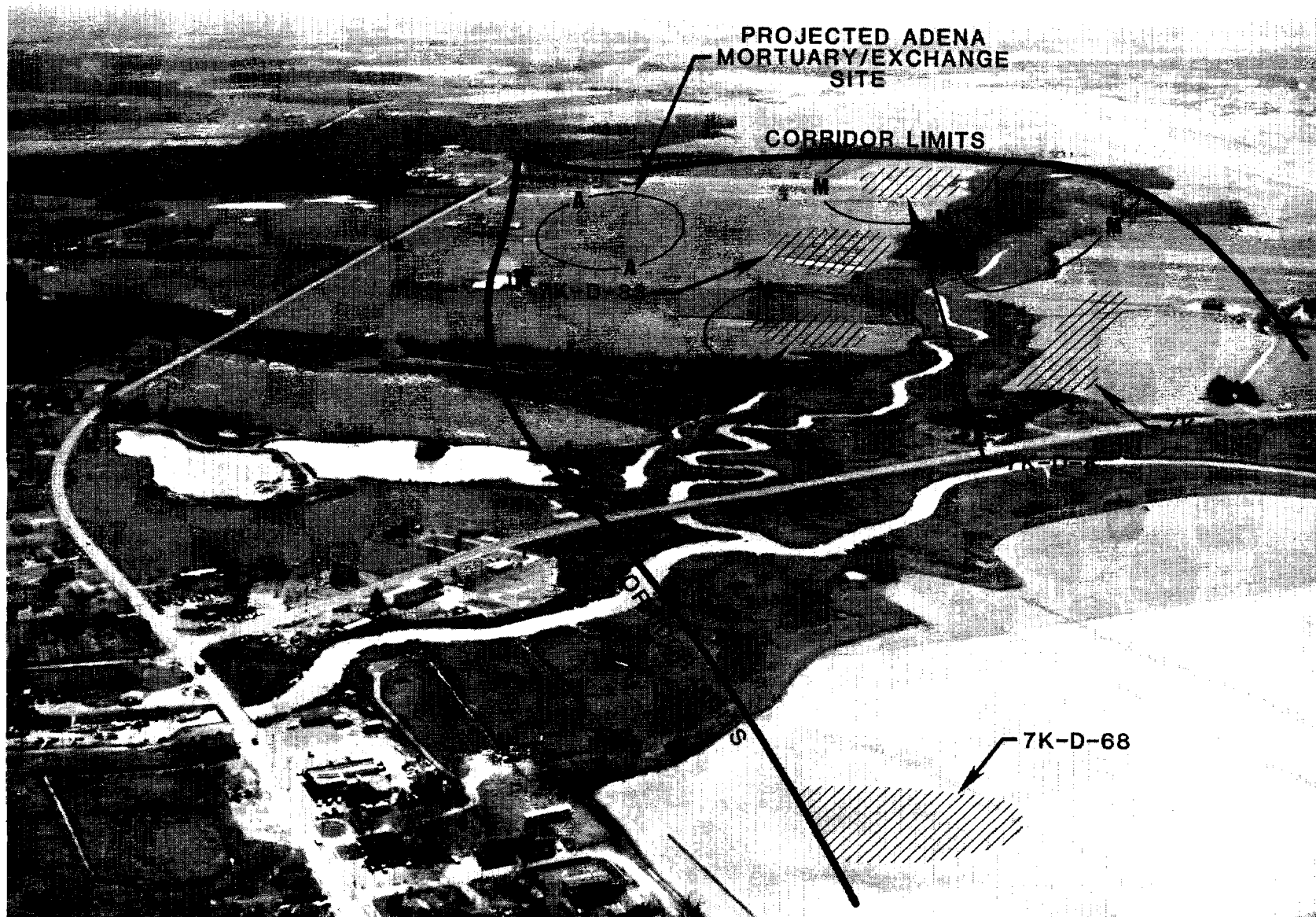
Management Strategies and Recommendations for Future Work

Before considering the possible uses of the data presented in this report, it is important to consider its limitations. Similarly, it is important to note inappropriate uses of the management data. As was noted in the introduction to this report, the data presented here should not be interpreted as a substitute for a cultural resources location and identification survey of any specific alignments within the project area that are chosen at a later date. Also, the assessments of potential National Register significance cannot be viewed as final determinations of eligibility for any sites in the proposed project area. The only exception would be the few sites that are already listed on, or determined eligible for, the National Register. What the report does do is provide reliable and accurate estimates of expected site distributions in the study area and notes the potential significance of the expected sites. However, the delineation of potential site distributions should not be taken for final inventories of expected sites and alignment-specific inventories based on field survey will be a necessary part of future location/identification surveys.

With the limitations noted above in mind, it is possible to outline a number of possible applications of the management data presented in this report. These applications are listed below: 1) The management zones listed in Attachment VIII can be used as guides to the sections of the project area that will be potential "problems" during future phases of the project. Herein, "problems" refers to the existence of significant resources that will cost both time and money to mitigate potential adverse effects (Plates 8 & 9). Generally, these problem areas would include all areas classified as Zones I and II on the maps in Attachment VIII. 2) The data presented in this report can be used to develop plans and strategies to deal with the problem areas noted above. One simple strategy that could be developed would be to use the maps of management/sensitivity zones in Attachment VIII to

PLATE 8

STUDY CORRIDOR and KNOWN SITES



LITTLE CREEK AREA

PLATE 9

STUDY CORRIDOR and KNOWN SITES



FREDERICA AREA

delineate areas that could be avoided, if at all possible. In some cases this would be impossible, such as the section of the project area between Middletown, Odessa, and Clayton, and the section of the western option of the southern terminus between Dover and Frederica, which are all within Management Zone I (Plates 8 & 9). In these areas the maps of specific prehistoric site probability zones (Attachment V), pre-1802 historic sites (Attachment VI), and post-1802 historic (Attachment VII) could be used to avoid specific high probability, high significance zones. This level of site avoidance would be most applicable at the level of specific engineering and design, as opposed to general alignment selection. Avoidance of areas with high probabilities of significant sites is a preferred option both because the costs to the Delaware Department of Transportation for mitigation are minimized and because the impact on the cultural resource base is lessened.

If avoidance is not possible due to design or cost considerations, the data presented in this report can be used as a rough guide to potential fieldwork that might be required. In general, Phase I location/identification surveys will have to be done for most, if not all, of the proposed alignments areas. Also, Phase II excavations to determine the National Register eligibility of any prehistoric or historic sites discovered during the Phase I survey will be necessary. Thus, except in a few cases to be discussed later, once a final alignment is chosen, Phase I and II surveys will have to be carried out along its entire length. However, only certain sites will require Phase III data recovery excavations, or recordations in the case of standing structures. Such sites would be those determined eligible for the National Register of Historic Places and the present report will be useful both as a regional summary of known sites and research goals to help determine what sites are significant and as a guide to where significant sites may be located.

Table 24

**Levels of Field Investigation by
Prehistoric Site Types**

		Levels of Investigation		
<u>Site Types</u>		<u>Location and Identification</u>	<u>Phase II</u>	<u>Data Recovery</u>
<u>Paleo-Indian/Early Archaic</u>				
quarry	(U)	X		
	(P)	X		
quarry reduction	(U)	X	X	
	(P)	X	X	
quarry-related base camp	(U)	X	X	X
	(P)	X	X	X
base camp	(U)	X	X	X
	(P)	X	X	X
base camp maintenance station	(U)	X	X	X
	(P)	X	X	X
hunting site	(U)	X	X	X
	(P)	X		
<u>Middle Archaic</u>				
macro-band base camp	(U)	X	X	X
	(P)	X	X	
micro-band base camp	(U)	X	X	X
	(P)	X	X	
procurement site	(U)	X	X	X
	(P)	X	X	
<u>Late Archaic - Middle Woodland</u>				
macro-band base camp	(U)	X	X	X
	(P)	X	X	
micro-band base camp	(U)	X	X	X
	(P)	X	X	
procurement site	(U)	X	X	X
	(P)	X		
<u>Late Woodland</u>				
macro-band base camp	(U)	X	X	X
	(P)	X	X	
micro-band base camp	(U)	X	X	X
	(P)	X	X	
procurement site	(U)	X	X	X
	(P)	X	X	

For prehistoric sites, Table 24 lists the varied functional site types for each time period and notes the levels of field investigations that would be appropriate given either undisturbed, (unplowed) or disturbed (plowed) contexts. The various settlement models and maps listed in this report can be used as a guide to determine where these various site types are likely to occur and estimates of potential numbers of sites requiring Phase III data recovery excavations can be noted. A similar listing for historic sites is not possible because as yet the comparative data base for Delaware is poor and decisions of significance and need for further research will have to be made on a case-by-case basis. However, it can be noted that most of the pre-1802 predicted site locations are likely locations for Phase III data recovery excavations. Also, it is difficult to imagine what types of potentially significant post-1802 sites would not be eligible for Phase III data recovery excavations or recordation. The final use of the plan will be to make specific recommendations about the research and field methods to be used in the Phase I location/identification surveys. These recommendations are listed below:

- a) All standing structures within the proposed alignment should be field checked against the BAHP survey records and an inventory of sites for the alignment should be developed. The significance of these structures should be assessed on a case-by-case basis by a competent architectural historian.
- b) All sites with standing structures should be assessed for the potential of associated historical deposits and the archaeological deposits and the structures at a single site should be considered as a single cultural resource, not as two unrelated topics.
- c) The documented historic site locations listed in Appendix III and mapped on Attachment III, which do not have associated standing structures, should be viewed as a special class, or stratum, of potential

historic site locations that should be specifically checked for associated archaeological remains.

- d) Areas denoted as having a high probability for pre-1802 historic sites should also be viewed as a special class of potential historic site locations and should be checked especially carefully for archaeological remains of that time period after the completion of in-depth archival research to identify documented settlement locations. Remaining areas within the alignment that need to be checked for historic sites can be surveyed as part of the general fieldwork that will look for both historic and prehistoric sites.
- e) All areas within the alignment noted as high or medium probability zones for prehistoric sites should be carefully checked during the Phase I survey. Low probability areas should also be surveyed; however, it may not be necessary to completely survey all low probability zones. It is suggested here that a non-proportional stratified sample could be used in some project areas during the Phase I survey. For example, we can be fairly certain that many of the low probability areas on interior flats with no associated surface water and no poorly drained settings are unlikely to contain any sites. Even if they do contain sites, the sites are likely to be small lithic scatters that do not usually contain much significant data. In a few cases these sites have been studied (eg.; Limestone Hills Site Complex noted in Custer (1981) and the Archaic component of the Lancaster County Park site reported by Kinsey and Custer (1982) and they have yielded few artifacts and little significant data. Also, these kinds of topographic settings are likely to be plowed and disturbed, further reducing the chance that they would produce significant data. Finally, these sites are so ubiquitous that the

number that might be disturbed without recordation is a very small fraction of the resource base. With these arguments in mind, it is suggested here that prior to the beginning of the fieldwork portion of the Phase I survey, these areas described above be delineated in consultation with the DelDOT Archeologist and engineers and the staff of the Delaware Bureau of Archaeology and Historic Preservation, and that only a controlled sample of them actually be surveyed in the Phase I research. This will probably cause substantial savings of time and money which may be better spent in the high significance areas along the major drainages.

- f) The site data in Appendices I - II have been entered into a computerized data base (d BASE II) and can be cross-tabulated and sorted by individual variables or combinations of variables. These cross-tabulations can be used to assess the uniqueness of certain classes of cultural resources.

In conclusion, this report has documented the known and potential cultural resources of the project area and outlined management considerations for use in project planning. Hopefully, use of this information will help to minimize the project's impact on the cultural resources of central Delaware.